DOCUMENT RESUME

ED 254 843 CS 208 642

AUTHOR Marcus, Stephen
TITLE Computers and the Teaching of Writing: Variations on a Theme.
PUB DATE [84]
NOTE 10p.; Document contains microdot printing that may not reproduce clearly.
PUB TYPE Reports - Descriptive (141)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Computer Assisted Instruction; *Computer Software; *Educational Technology; Elementary Secondary Education; *Technological Advancement; *Writing Instruction; Writing Processes

ABSTRACT

Software for computer assisted instruction in writing (CAI/writing) can be described in terms of "generations." The earliest (because easiest) application of computers to writing instruction was in the area of drill and practice. By focusing on one or another element of basic skills, well-designed drill and practice software provides instruction that takes advantage of the computer's capacity for presenting information in a compelling and interactive way while keeping track of students' progress. Second generation software--or writer aids--refers to software that focuses on one or another stage of the composing process: prewriting, writing, or rewriting. This generation, in addition to including prewriting programs and using word processors, provides programs that will analyze the surface features of the students' text and give feedback on such dimensions as the degree of sexist language, jargon, or imprecise diction. Third generation software includes integrated author systems. In addition to these more traditional approaches, there is the growing availability of telecommunications networks that provide students with the opportunity to write to others, get responses, and get real responses from real readers. The field of CAI/writing is fortunate in that it has plenty of good models to choose from in the irstructional arena. (HOD)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED254843

Computers and the Teaching of Writing: Variations on a Theme

by

Stephen Marcus, Ph.D.
Associate Director, South Coast Writing Project
Graduate School of Education
University of California
Santa Barbara, California 93106

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

X This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official NIE position or policy.

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

Stephen Marcus

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

CS 208 612

Computers are affecting the quality and quantity of time spent at each stage of the composing process. The technology provides students with new powers and incentives, and the students are discovering that the technology is both accessible and suited to their needs.

Software for computer-assisted instruction in writing (CAI/writing) can be described in terms of "generations." From the earliest, single-activity, drill-and-practice software to the notion of "idea processors," the historical development of CAI/writing courseware provides a useful framework for describing the resources now available for elementary through college levels.

BACKGROUND: THE COMPOSING PROCESS

Writing in the schools can serve two purposes. The first -- and most familiar -- is for students to record what they know in term papers, book reports, essay tests, and so forth. A very different -- and equally valuable -- purpose for writing is to help students discover what it is they can learn. That is, writing (like reading) is a tool for learning in every subject matter. The very act of trying to put things into words can help students discover their ideas, sharpen their thoughts, and order their thinking.

Whether the purpose is to record or discover, the composing process is often thought of in terms of a simple working model: prewriting,

time spent on prewriting (thinking, talking, making notes, outlining, brainstorming, etc.), 1% on writing (putting down the first complete version), and 14% rewriting (proofreading, minor editing, and major rethinking). In addition, this working-model is often expanded to include the getting of readers' reactions prior to revision and the "publication" of students' writing, either formally or in the more general sense of "making it public," for example by reading it out loud to classmates or by posting it for others to read.

THE FIRST GENERATION of CAI/WRITING

The earliest (because easiest) application of computers to writing instruction was in the area of drill and practice. Unfortunatley, in its least successful form this amounted to finding "better ways to burn witches." People took activities which did bad things to students and used computers to do a more efficient job of doing bad things to them. In addition, it was in this area that (even today) some of the most questionable aspects of arcade games found their way into educational software (e.g., gender-bias in graphics and in reliance on competitive aggression). As software designers incorporated more instructional savvy -- for example, not rewarding wrong answers with more exciting and interesting results than right answers received -- and as better diagnostic and score management systems were incorporated into the software, these first generation

applications have taken a respectable, if limited, place in the courseware available for helping improve students' writing skills. By focusing on one or another element of basic skills (spelling, punctuation, sentence combining, etc.), well-designed drill-and-practice software provides instruction which takes advantage of the computer's capacity for presenting information in a compelling and interactive way while keeping track of students' progress.

THE SECOND GENERATION: WRITER AIDS

First generation CAI/writing will undoubtedly continue to improve in its capacity for instructing and refining students' basic skills. However, it is with the introduction of second generation software that the computer begins to have a more profound affect on the composing process. The term "writer aids" refers to software that focuses on one or the other stage of the composing process: prewriting or writing or rewriting.

Several useful approaches to computer-assisted prewriting allow students to generate preliminary ideas and structures for literary analysis, expository essays, poems, etc. In general, the computer presents the student with a coherent set of questions modeled on those which a teacher might use to elicit the students' own ideas or to suggest perspectives that may help the writers take a broader or more creative approach to the topic at hand. In some cases, students' responses are put into an appropriate format; in others, the computer merely provides a

print-out of the resulting "dialogue," thereby providing the student with raw material for an actual draft.

A different kind of computer-assisted prewriting -- one which doesn't require specialized software -- demonstrates one of the unique qualities of the technology. This is the "invisible writing with computers" approach developed by the South Coast Writing Project at the University of California, Santa Barbara. Simply by turning down the monitor's brightness knob, students could not see their prewriting even though their evolving text was being recorded by the word processor they were using. Students reported that invisible writing helped them concentrate on their ideas (rather than get distracted with premature proofeading), produced writing that "came more from within" themselves, and helped them "understand that writing really begins with prewriting."

This is a simple trick to play with the computer, yet it suggests how word processors themselves, as tools for the writing stage of the composing process, have actual <u>instructional</u> dimensions. They teach students that writing isn't what it used to be: excruciating preparation for tedious revision and re-typing. Students see that their words are no longer "carved in stone." They are instead written in light. They are part of a more fluid, plastic, or flexible medium which offers little resistance to physical manipulation. Yet when "hardcopy" is produced, even with a dot-matrix printer, it can have the look of something to be proud of.

Second generation software, in addition to prewriting programs and word processors per se, includes programs that will

analyze the surface features of the student's text and provide feedback on such dimensions as the degree of sexist language, jargon, or imprecise diction. Analyses may provide information about the degree of nominalization or of selected parts of speech. Especially sophisticated software may check on subject-verb agreement and use of active versus passive voice. Various programs will check spelling and punctuation. An ever increasing number of programs will suggest changes and will provide direct instruction to help students make appropriate revisions.

It should be remembered that second-generation software generally focuses on a single stage of the composing process. The prewriting software has virtually no word processing capability. Word processors may help you search-and-replace, but they won't help you figure out what to put there in the first place. Many text analyzers will dutifully help you adjust the readability of any garbage you type in, but they won't help you avoid delivering that first load of trash.

THE THIRD GENERATION: INTEGRATED AUTHOR SYSTEMS

More instructionally rich second-generation software is being designed, and there will always be a place for it. It was inevitable, however, that development of CAI/writing would produce software with integrated capacities for prewriting,

writing, and rewriting. Programs like Quill, WANDAH, The Writer's Helper, and the Writer's Workshop are examples of courseware that has evolved from earlier focus on each stage of the composing process. Such programs provide direct instruction in prewriting, include a word processor, and have editing and rewriting aids. Such systems attempt to replicate selected portions of student-teacher interaction during the development of a piece of writing. They are analogous to attempts in other areas to develop that class of computer-assisted problem-solving tools known as an "expert systems."

THE MODEL EXPANDED: READER RESPONSE AND "PUBLICATION"

Computers provide specialized means for generating, storing, and revising texts. They also allow groups of people to have easy access to each other's work and allow teachers to examine the various stages of the student's compsotion without taking the work away from the writer. Many teachers have developed informal ways to have comments added to students' word processor files, and specially designed software (like RSVP or that available with PLATO) allows teachers to "mark up" papers the way they might with the traditional red pen.

In addition to these more traditional approaches, there is the growing availability of telecommunications networks that provide students the opportunity to write to others, get responses, and in general, get real responses from real readers

who are less likely to belong to the same mileau as the writers. One striking example of this is the work done by Jim Levin and his colleagues, who have arranged for elementary students in southern California to correspond with children in Alaska. Using software called the Writer's Assistant along with a telecommunications system, the students have been able to experience the fascination and frustration of making themselves clear. Computer-assistance in this case increases the speed and helps shape the structure of their correspondence. It enhances a dimension of the composing process that writing teachers have long understood to be crucial, if often neglected in schools: writing for a real audience. As informal as such "publication" is, it helps a great deal in encouraging students to take their own and others' writing seriously.

ADDITONAL APPROACHES AND FUTURE GENERATIONS

There is specialized software (like Story Tree) for students and teachers to use in composing interactive texts, whether these texts are stories, poems, or some kind of study guide for math, chemistry, or history. Other software (like Think Tank) helps organize ideas in a traditional outline form but aids the writer in deciding under which heading a particular idea might be placed. Other software, still in development, helps students generate and test hypotheses in the course of preparing papers

that are "published" in classroom seminars.

It seems clear that future software will refine and extend existing approaches to CAI/writing. The trend toward integrated packages will perhaps come to include specific routines for acquiring open-ended human response as well as programmed machine analyses. More readily available data bases will perhaps encourage student writers to browse through electronic libraries and to increase their interest in more traditional ones.

As many advances as there have been in CAI/writing, it's well to remember that -- "generations" notwithstanding -- the field is in its infancy. Well-intentioned software developers have been trying their best to "computerize" various aspects of the composing process, with more or less success. At this point, their willingness to experiment and to explore is perhaps the most hopeful sign.

There is hardly agreement on the best ways to teach writing itself -- let alone with computer assistance. The field of CAI/writing is fortunate in that it has plenty of good models to choose from in the instructional arena and exciting development tools to adopt from the technological domain. Most important, however, is that very talented teachers all over the nation are combining the best of both worlds to the benefit of themselves and their students.